UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
MARIAM, DANIEL G

ART UNIT	PAPER NUMBER
2621	

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 May 2004*.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *   c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Response to Amendment

1.   In response to the Final Office Action mailed on February 13, 2004 applicants have

submitted an amendment filed on May 13, 2004, amending claims 1, 10, 12-14, and 19-20; and

arguing to traverse the rejection of pending claims 1-27.

Response to Arguments

2.   Applicants' arguments see pages 7-8, filed May 13, 2004, with respect to the Shin

reference have been fully considered and are persuasive. The 35 USC 102 rejections of claims 1,

10, and 19 have been withdrawn.

3.   With regard to the Sullivan reference, applicants argue starting on page 8 of the remarks,

that Sullivan neither teaches nor suggests a storage medium that stores each of the processed

image segments. While the Examiner agrees that Sullivan does not expressly show a storage

medium to store the processed image data, it would have been obvious if not inherent that the

image processor inherently requires storage to store each of the segments as they are processed.

Nonetheless, this feature is extremely well known to store processed image data before sending

the processed data for display, as shown by (Date, et al) which will be discussed in the rejection

below.

Applicants further allege on page 8 of the remarks, that the processor 20 of Sullivan

supplies the image rather than the image segments to the output device. The Examiner disagrees.

Given the broadest reasonable interpretation, each processed image does indeed contain

segments of the image data, since the processed image is generated from a number of the image

segments. Applicants further allege that Sullivan merely discloses capturing an analog image

rather than a digital image. The Examiner strongly disagrees. Sullivan does clearly shows an

image scanner (item 10, in Fig. 1) and a digitizer for digitizing the scanned image (item 12, in

Fig. 1), and thus the scanner + the digitizer, does capture a digital image. Therefore, Sullivan

does meet applicants' claimed invention of capturing a digital image recited in independent

claims 1, 10, and 19.

With respect to the McCubbrey reference, applicants argue on page 9 of the remarks, that

combining McCubbrey with Sullivan is improper because the methodology discloses in Sullivan

by its very nature is performed sequentially and would not have been performed using

pipelining. Although McCubbrey is not used in the current Office Action in light of the newly

surfaced prior art, namely (Date, et al), the test for obviousness is what the combined teachings

of the references would have suggested to one of ordinary skill in the art. See In re Young, 927

F. 2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991) and In re Keller, 642 F. 2d 413, 425,

208 USPQ 871, 881 (CCPA 1981). Moreover, in evaluating such references it is proper to take

into account not only the specific teachings of thee references but also the inferences which one

skilled in the art would reasonably be expected to draw therefrom. In re Preda, 401 F. 2d 825,

826, 159 USPQ 342, 344 (CCPA 1968). This response would also apply arguments made with

regard to the Ise reference.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5.   Claims 1, 10, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Lathrop

(6,288,743).

With regard to claim 19, Lathrop discloses processing image segments (See for example,

Figs. 1 & 2), comprising: an image sensor that captures a digital image (See items 16 and 18, in

Fig. 1; and col. 8, lines 32-37); a processor that divides the captured image into a plurality of

image segments and performs image processing on each of the plurality of image segments (See

for example, col. 8, lines 38-44); and a storage medium that stores each of the processed image

segments (See for example, col. 8, lines 45-47).

Claim 1 is rejected the same as claim 19 except claim 1 is a method claim. Thus,

argument similar to that presented above for claim 19 is equally applicable to claim 1.

Claim 10 is rejected the same as claim 1. Thus, argument analogous to that presented

above for claim 1 is applicable to claim 10. Lathrop further discloses a computer-readable

medium having computer-executable instructions stored thereon for performing the steps recited

in the claim (See Fig. 1).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.   Claims 1, 3-4, 10, 12-13, 19, and 21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Sullivan (4,764,971) in view of Date, et al. (5,923,339).

With regard to claim 19, Sullivan discloses a generic image processing apparatus (See Figure 1), comprising: an image sensor, i.e., scanner, that captures a digital image (See items 10-12, in Fig. 1; and col. 7, lines 7-11); a processor, i.e., GLRT image segmentation apparatus, that divides, i.e., segments, the captured image into a plurality of image segments (See item 14, in Fig. 1; and col. 7, lines 11-16), and performs image processing on each of the plurality of image segments (See item 20, in Fig. 1; and col. 16-19); and a storage medium, i.e., output device, such as CRT display or hard copy generator, that stores each of the processed image segments (See item 22, in Fig. 1). While it would have been obvious if not inherent that the image processor (20) of Sullivan inherently requires storage to store each of the segments as they are processed, Sullivan does not elaborate as to where the processed image segments are being stored before sending them to the displaying unit. It is extremely well known to store processed image data prior to transferring the data to n output device, such as a displaying device, as shown by Date, et al. (See for example, memory units 102-105, in Fig. 1).

Sullivan and Date, et al are combinable because they are from a similar field of endeavor, i.e., image processing (See for example, col. 2, lines 29-43). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Date, et al. with Sullivan. The motivation for doing so is for no other reason than to display the image based on data processed by the image processor and stored in a memory unit (See for example, col. 2, lines 58-61). Therefore, it would have been obvious to combine Date, et al. with Sullivan to obtain the invention as specified in claim 1.

With regard to claim 21, wherein the storage medium stores each of the processed data segments as each of the processed data segments arrives at the storage medium (See items 102-105, in Fig. 1 of Date, et al.).

Claim 1 is rejected the same as claim 19 except claim 1 is a method claim. Thus, argument similar to that presented above for claim 19 is equally applicable to claim 1.

With regard to claim 2, Sullivan does not explicitly call for performing image processing on each of the plurality of image segments in pipeline stages. However, Date, et al. (See for example, Fig. 1) teaches this feature. Therefore, it would have been obvious to one having ordinary skill in the art to incorporate the teaching as taught by Date, et al. into the system of Sullivan, and to do so would at least minimize the time taken for processing the images (See col. 1, lines 61-63).

Claim 3 is rejected the same as claim 21 except claim 3 is a method claim. Thus, argument similar to that presented above for claim 21 is equally applicable to claim 3.

With regard to claim 4, wherein the performing step is being performed on a first image segment when the storing step is being performed on a second image segment (See items 14, 20 and 22, in Fig. 1 of Sullivan; and See Fig. 1 of Date, et al).

With regard to claim 8, wherein one of the pipeline stages is divided into at least two parallel processing stages (See for example, Fig. 1 of Date, et al.).

With regard to claim 9, wherein the performing step comprises: performing at least a portion of the image processing in at least two parallel image-processing stages (See for example, Fig. 1 of Date, et al.).

Claim 10 is rejected the same as claim 1. Thus, argument analogous to that presented above for claim 1 is applicable to claim 10. Sullivan further discloses a computer-readable medium having computer-executable instructions stored thereon for performing the steps recited in the claim (See for example, col. 7, lines 19-29).

Claim 11 is rejected the same as claims 2. Thus, argument analogous to that presented above for claim 2 is equally applicable to claim 11.

Claim 12 is rejected the same as claim 3. Thus, argument similar to that presented above for claim 3 is equally applicable to claim 12.

Claim 13 is rejected the same as claim 4. Thus, argument similar to that presented above for claim 4 is equally applicable to claim 13.

Claim 18 is rejected the same as claims 9. Thus, argument analogous to that presented above for claim 9 is equally applicable to claim 18.

Claim 20 is rejected the same as claim 2 except claim 20 is an apparatus claim. Thus, argument similar to that presented above for claim 2 is equally applicable to claim 20.

Claim 23 is rejected the same as claim 8 except claim 23 is an apparatus claim. Thus, argument similar to that presented above for claim 8 is equally applicable to claim 23.

8.   Claims 5-7, 14-16, 22, and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sullivan in view of Date, et al. and further in view of Ise, et al. (5,140,647).

With regard to claim 5, Sullivan (as modified by Date, et al.) discloses all of the claimed subject matter as already discussed above in paragraph 7, and the arguments are not repeated herein, but are incorporated by reference. Sullivan (as modified by Date, et al.) does not explicitly call for dividing the image into a plurality of image segments that overlap one another.

However, Ise, et al. (col. 4, lines 47-48; and col. 13, lines 24-27) teaches this feature. Therefore,

it would have been obvious to one having ordinary skill in the art to incorporate the teaching as

taught by Ise, et al. into the system of Sullivan, if for no other reason than to create image

segments or portions that overlay one another, and thereby shortening the time taken for

processing.

With regard to claim 6, the method according to claim 1, further comprising: stitching,

i.e., joining, the plurality of image segments together to restore the image after the performing

step (See for example, item 23, in Fig.3; and col. 2, lines 2-9 of Ise, et al).

With regard to claim 7, the method according to claim 6, wherein the stitching step

comprises: stitching the plurality of image segments together sequentially following

the performing step (See for example, Figs. 3 and 18 of Ise, et al).

Claims 14, 15, 16, and 17 are rejected the same as claims 5, 6, 7, and 8 respectively.

Thus, arguments analogous to those presented above for claims 5, 6, 7, and 8 are respectively

applicable to claims 14, 15, 16, and 17.

Claim 22 is rejected the same as claim 6 except claim 22 is an apparatus claim. Thus,

argument similar to that presented above for claim 6 is equally applicable to claim 22.

With regard to claim 24, the method according to claim 1, further comprising: storing

image file information, wherein the image file information corresponds to the plurality of image

segments for a stored image (See for example, item 9, in Fig.1 of Ise, et al); and updating the

image file information that has been affected by the step of performing image processing on any

one of the plurality of image segments corresponding to the stored image (See for example, col.

4, lines 35-60 of Ise, et al).

With regard to claim 25, the method according to claim 24, further comprising:

modifying, i.e., correcting, at least one of the stored plurality of image segments that has been

affected by the step of performing image processing on any one of the plurality of image

segments corresponding to the stored image (See for example, col. 4, lines 35-60 Ise, et al).

Claims 26 and 27 are rejected the same as claims 24 and 25 respectively. Thus,

arguments analogous to those presented above for claims 24 and 25 are respectively applicable to

claims 26 and 27.

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. US Patent (6,496,598) to Harman discloses an image processing system, wherein a

processed image is outputted to a suitable storage and/or a displaying system. US Patent

Numbers: 5848185 (See Fig. 26); and 5850487 (See col. 1, line 65 through col. 2, line 14);

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to DANIEL G MARIAM whose telephone number is 703-305-

4010. The examiner can normally be reached on M-F (7:00-4:30) FIRST FRIDAY OFF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, LEO BOUDREAU can be reached on 703-305-4607. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DANIEL MARIAM
PRIMARY EXAMINER

May 27, 2004